The requirement of Ca() and M|>() per unit SiO-j in the bath thus is derived as bein

^=2-38 Cat) and M(i;0 . . . (-11), and
*j j_
|™=1-0() CaO iiml MgO . . . (41 A).

With the aid of these figures, the composition of any desired charge, which should have a, good final slag, admits of being fixed, and likewise, admits of the ascertainment of the amounts of all necessary additions.

A good final slag should make, its appearance as a quietly flowing mass of creamy consistency. A bar of iron dipped into the slag should, on being taken out of tlio furnace, be covered with a uniform crust of slag of about *2 to II millimetres thickness, which after cooling do\vn should exhibit a dull grey-black tint.

In the test spoon, the slag itself should How quietly like oil; if it is taken out with fluid metal, it should not hn effervescent. It should l>e easily stripped oft' tho steel test, but admit of being held back, so that the latter can bo cast froti from slag into the test mould.

An effervescent state shown that the, action of the slag on the metal is still under full way ; excessive fluidity is an evidence of an excess of metallic oxides, but with high carbon metal is at tinus*, also, of an excens of silica.

Viscosity is a sign of an excess of earthy bases, or too high magnesia content. At times, this viscosity suddenly makes its appearance at the end of the charge, after largu additions of manganese, and one has sought to explain this phenomenon by manganese sesqui-oxide MnjAi making UK appearance, which may be insoluble in the slag.

One can bring too thin a slag to the proper eoiiHiKtoneo by means of addition of lime and especially nwgwwia, whilst too thick a slag can be made more fluid by addition of silica, but the latter means must naturally be employed with caution with highly phosphoric charges. MHO, fluorspar rapidly makes the nlag fluid, but, however, thin material in only employed in rare instances,